Notice of Allowability	Application No.	Applicant(s)	
	09/928,803	KANASUGI ET AL.	
	Examiner	Art Unit	
	Chat C. Do	2193	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *07/18/05*.

2. ☒ The allowed claim(s) is/are *1-10,15,16,18,19,21 and 22*.

3. ☒ The drawings filed on *13 August 2001* are accepted by the Examiner.

4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a) ☒ All b) ☐ Some* c) ☐ None of the:
      1. ☒ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
   (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date *attached herein* .
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Brian Myers on 08/01/2005.

The application has been amended as following claims for clarification and avoiding mis-descriptive pre-amble:

1. (Currently Amended): ~~An FIR~~ finite impulse response (FIR) filter comprising: a first operational unit for operating input data which including a first input data and a second input data inputted after the first input data, said input data consists of transmitting information and is composed of bit strings, and additional data which is added in order to transmit said input data and; a second operational unit for operating on the first input data and a difference between said additional data corresponding to the first input data and said additional data corresponding to the second input data; and an adding unit for adding results of the first and second operational units and outputting the resultant as a filter response.

8. (Currently Amended): ~~An FIR~~ finite impulse response (FIR) filter comprising: a first operational unit for operating on a second input data inputted after a first input data

among input data which includes the first input data and the second input data and consists of transmitting information and is composed of bit strings, and additional data which is added in order to transmit the second input data; a second operational unit for operating on the first input data and said additional data corresponding to said first input data; and an adding unit for adding results of the fast and second operational units and outputting the resultant as a filter response.

15. (Currently Amended): A method of operating ~~an FIR~~ finite impulse response (FIR) filter, comprising the steps of: receiving in sequence input data which includes a first input data and a second input data inputted after the first input data, said input data consists of transmitting information and is composed of bit strings; operating said input data and additional data which is added in order to transmit said input data; operating the first input data and a difference between said additional data corresponding to said first input data and said additional data corresponding to the second input data; and adding results of said operations and outputting the resultant as a filter response.

16. (Currently Amended): A method of operating ~~an FIR~~ finite impulse response (FIR) filter, comprising the steps of: receiving in sequence input data which includes a first input data and a second input data inputted after the first input data, said input data consists of transmitting information and is composed of bit strings; operating the second input data and additional data which is added in order to transmit said second input data;

operating the input data and said additional data corresponding to said first input data; and adding results of said operations and outputting the resultant as a filter response.

18. (Currently Amended): A semiconductor integrated circuit including ~~an FIR~~ finite impulse response (FIR) filter, wherein the FIR filter comprises: a first operational unit for operating input data which includes a first input data and a second input data inputted after the first input data, said input data consists of transmitting information and is composed of bit strings, and additional data which is added in order to transmit said input data; a second operational unit for operating the first input data and a difference between said additional data corresponding to the first input data and said additional data corresponding to the second input data; and an adding unit for adding results of the first and second operations and outputting the resultant as a filter response.

19. (Currently Amended): A semiconductor integrated circuit including ~~an FIR~~ finite impulse response (FIR) filter, wherein the FIR filter comprises: a first operational unit for operating a second input data inputted after a first input data among input data which includes the first input data and the second input data, said input data consists of transmitting information and is composed of bit strings, and additional data which is added in order to transmit said second input data; a second operational unit for operating the input data and said additional data corresponding to said first input data; and an adding unit for adding results of the fast and second operations and outputting the resultant as a filter response.

21. (Currently Amended): A ~~communication system for transmitting data filtered by an FIR filter, the~~ finite impulse response (FIR) filter for use in a communication system comprising: a first operational unit for operating input data which includes a first input data and a second input data inputted after the first input data, said input data consists of transmitting information and is composed of bit strings, and additional data which is added in order to transmit said input data; a second operational unit for operating the first input data and a difference between said additional data corresponding to the first input data and said additional data corresponding to the second input data; and an adding unit for adding results of the first and second operations and outputting the resultant as a filter response.

22. (Currently Amended): A ~~communication system for transmitting data filtered by an FIR filter, the~~ finite impulse response (FIR) filter for use in a communication system comprising: a first operational unit for operating a second data inputted after a first input data among input data which includes the first input data and the second input data, said input data consists of transmitting information and is composed of bit strings, and additional data which is added in order to transmit said second input data; a second operational unit for operating the first input data among said input data and said additional data corresponding to said first input data; and an adding unit for adding results of said first and second operations and outputting the resultant as a filter response.

2. Claims 1-10, 15-16, 18-19, and 21-22 are allowed.

3. Claims 11-14, 17, 20, and 23 are cancelled.

REASONS FOR ALLOWANCE

4. The following is an examiner's statement of reasons for allowance:

The prior art of records fails to disclose or render an obviousness of a FIR filter comprising: a first operational unit for operating input data which including first and second input data wherein the input data consists of transmitting information and is composed of bit strings and additional data which is added in order to transmit the input data; a second operation unit for operating on the first input data and a difference between the additional data or the additional data corresponding to the first input data and the additional data corresponding to the second input data; and an adding unit as cited in independent claims 1, 8, 15-16, 18-19, and 21-22.

The closest found prior art is Akahori (U.S. 6,889,239). Akahori discloses a FIR filter comprising a first operational unit for operating input data which including first and second input data wherein the input data consists of transmitting information and is composed of bit strings and additional data which is added in order to transmit the input data; a second operation unit; and an adding unit. However, Akahori fails to disclose the second operation unit for operating on the first input data and a difference between the

additional data or the additional data corresponding to the first input data and the additional data corresponding to the second input data as cited above.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chat C. Do whose telephone number is (571) 272-3721. The examiner can normally be reached on 7:00AM to 5:00PM M-Th.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chaki Kakali can be reached on (571) 272-3719. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Chat C Do
Examiner
Art Unit 2193

August 8, 2005

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